

Pseudo-nitzschia species and domoic acid on the west coast of Vancouver Island, British Columbia, in 2015

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Harmful Algae Monitoring Program

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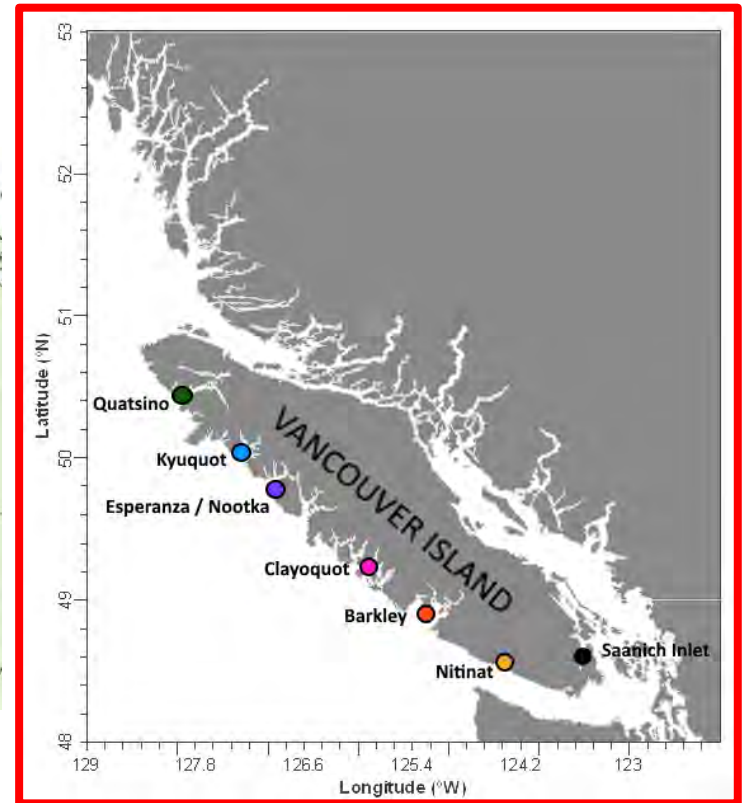
Overview

- * Where we are
- * Domoic Acid (DA) levels in shellfish samples in BC in 2015
- * *Pseudo-nitzschia* species seen in water samples in affected areas
- * Water temperature and salinity, WC Vancouver Island
- * Afterword: Saanich Inlet November 2015

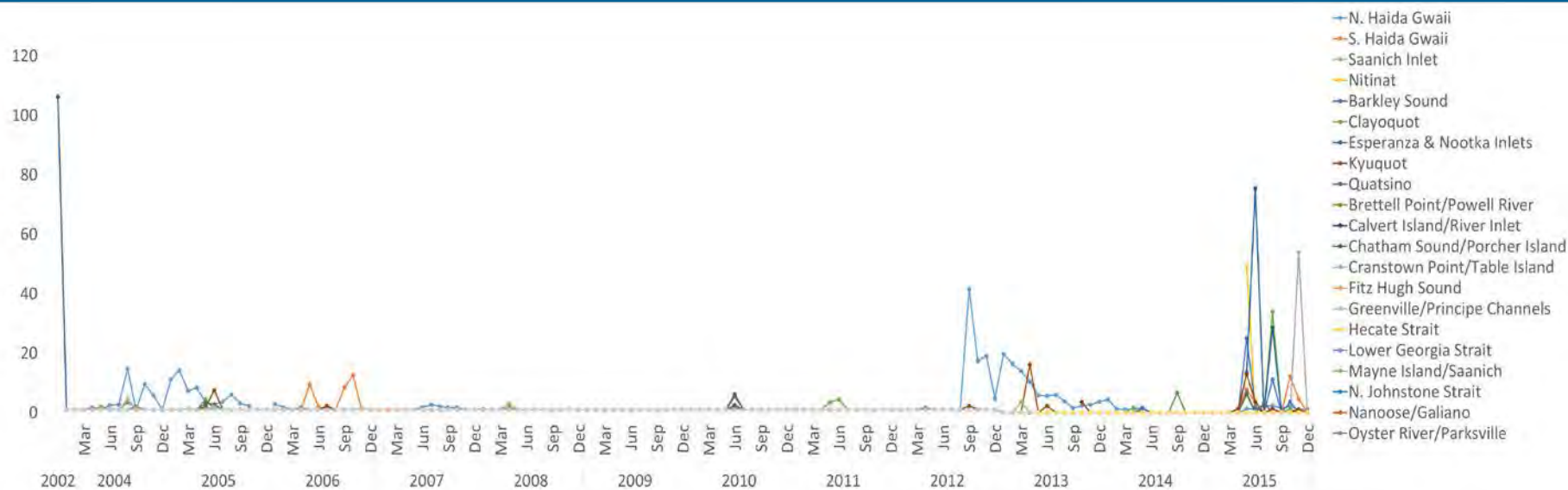


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Where we are: BC and Vancouver Island

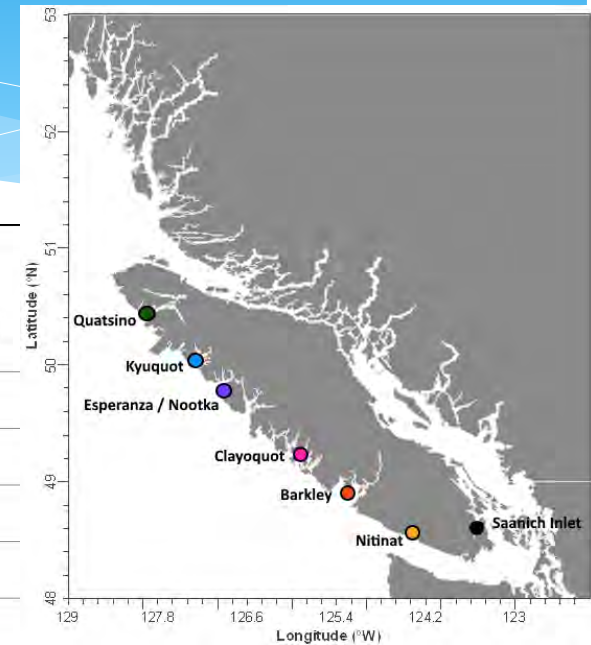
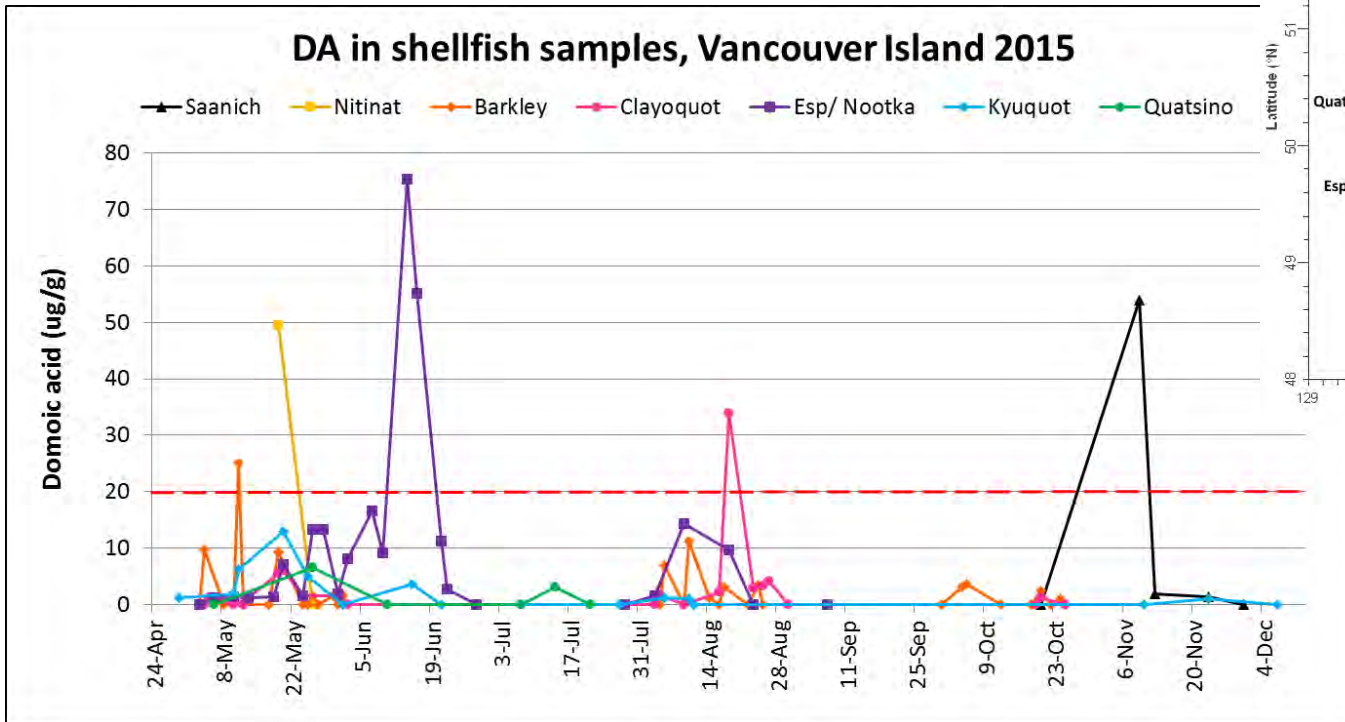


Unprecedented levels of DA in BC in 2015



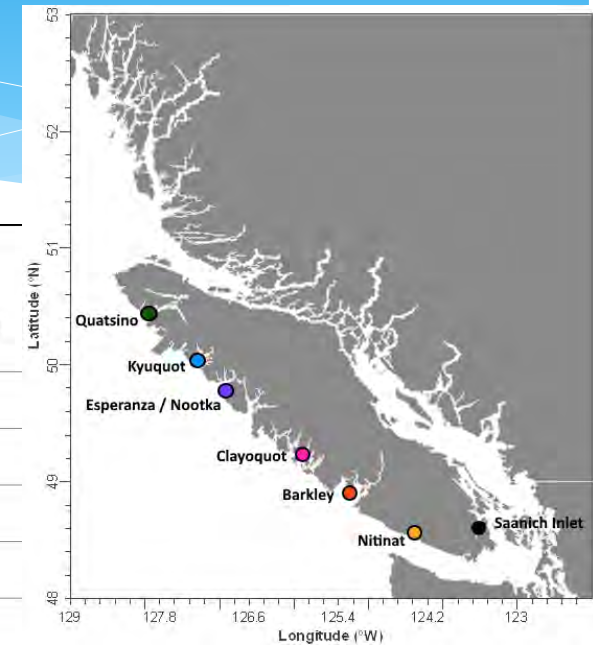
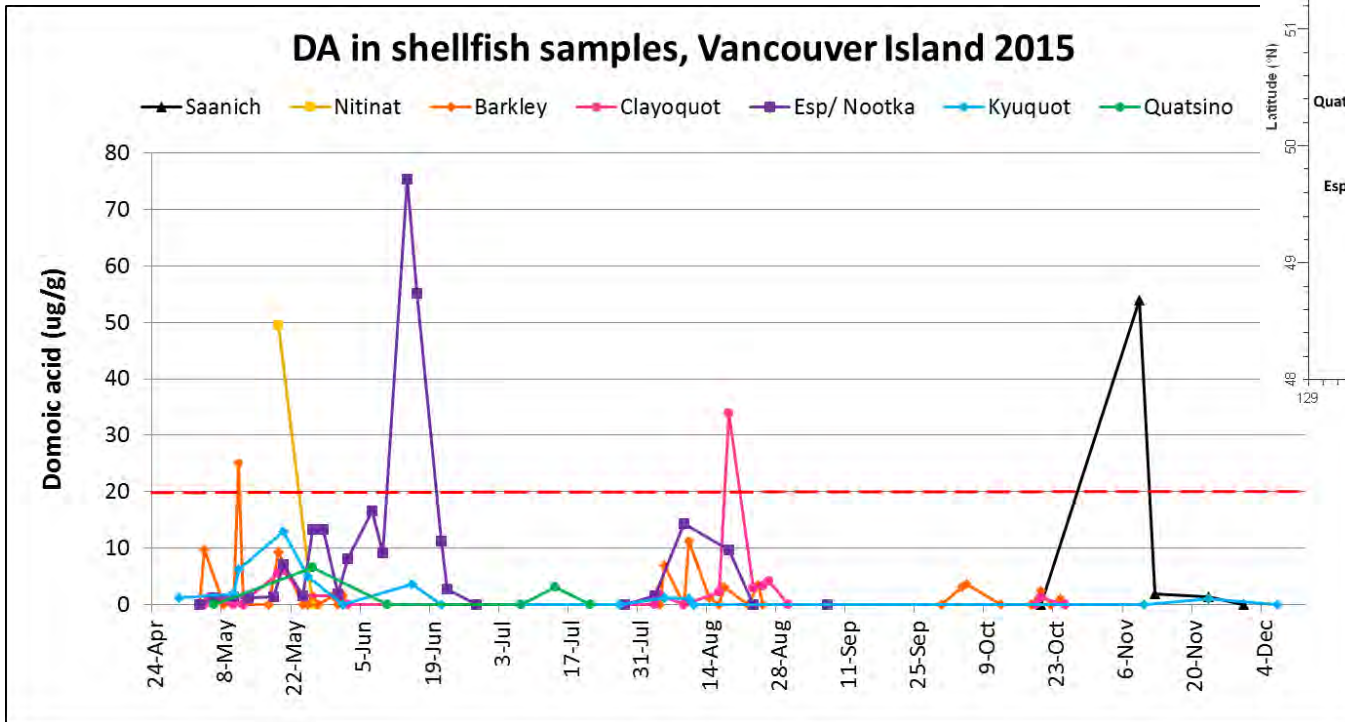
Domoic acid data from CFIA Shellfish Inspection Branch 2002 - 2015

Domoic Acid in Vancouver I sites



Domoic acid data from CFIA Shellfish Inspection Branch

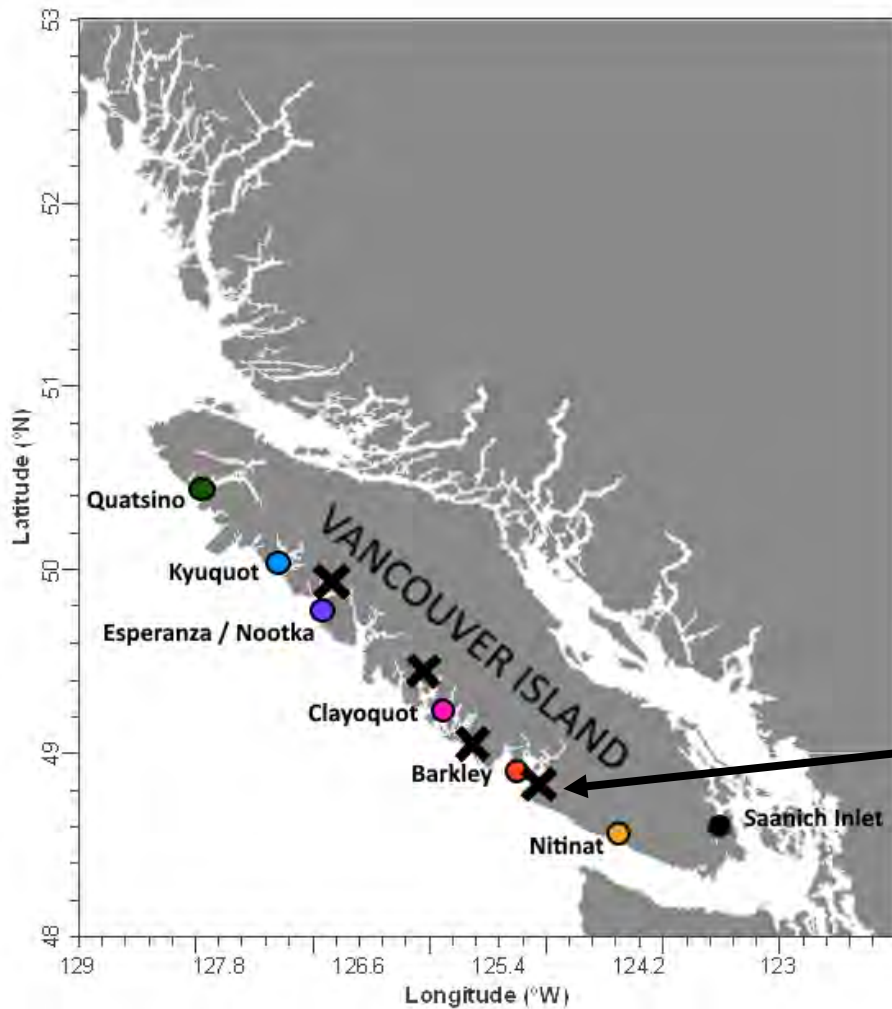
Domoic Acid in Vancouver I sites



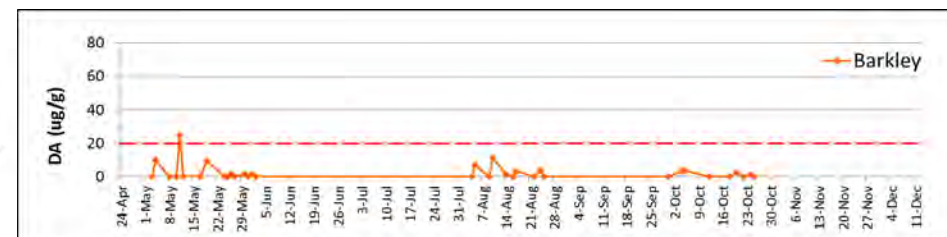
- April – October
- 106 samples +ive for DA
- max 75.4 $\mu\text{g/g}$ DA (Esperanza Inlet, mid-June)

Domoic acid data from CFIA Shellfish Inspection Branch

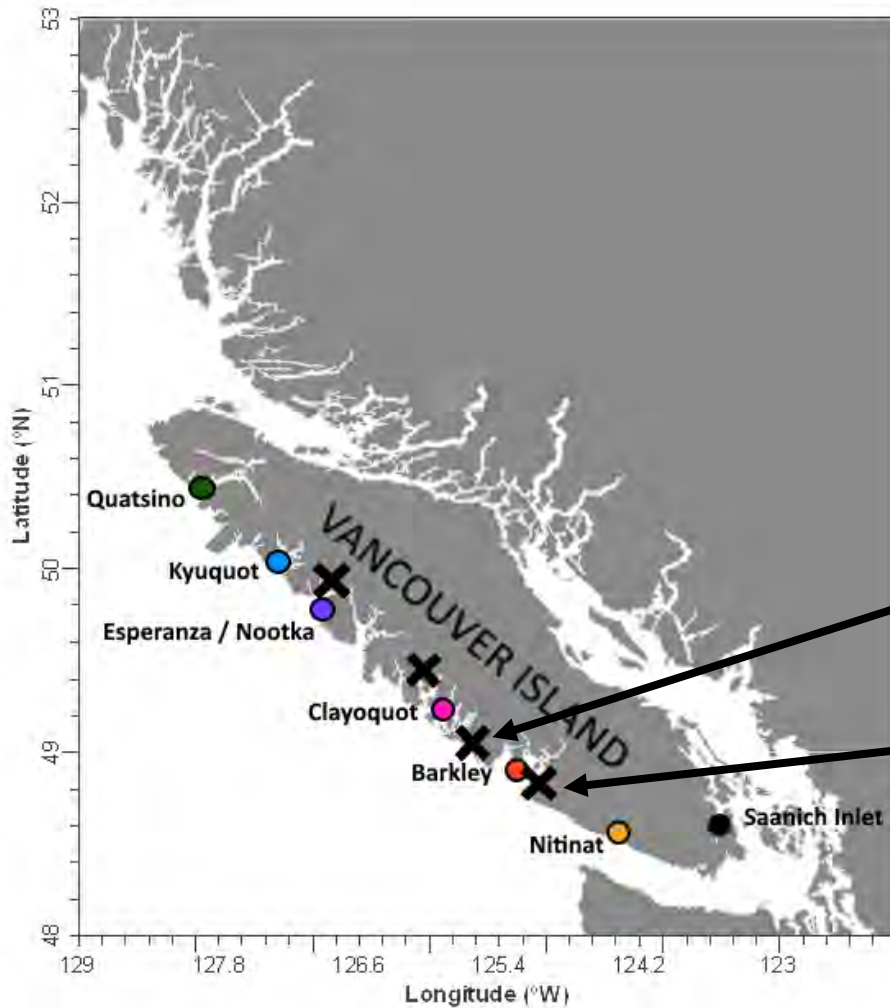
Pseudo-nitzschia species in local samples



Bamfield, May 6, *P. australis*

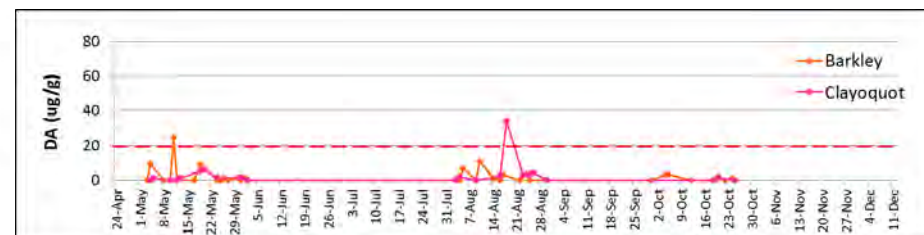


Pseudo-nitzschia species in local samples

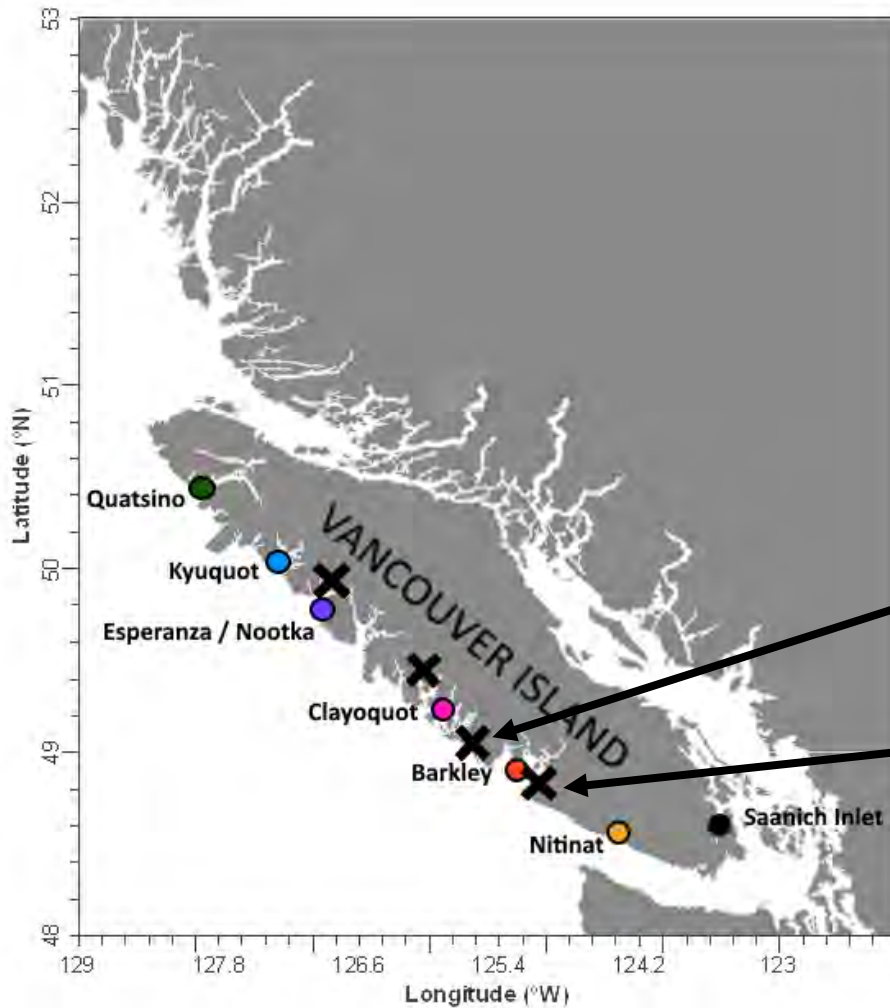


Long Beach, June 11
P. australis

Bamfield, May 6, *P. australis*



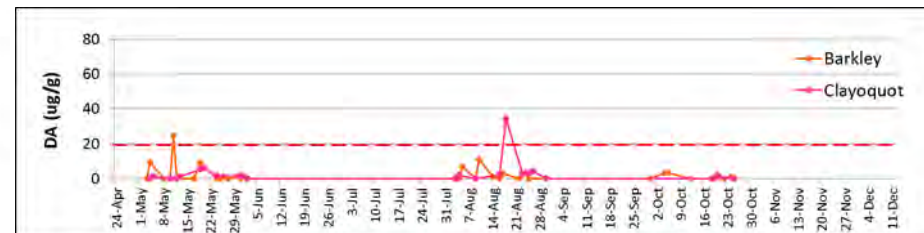
Pseudo-nitzschia species in local samples



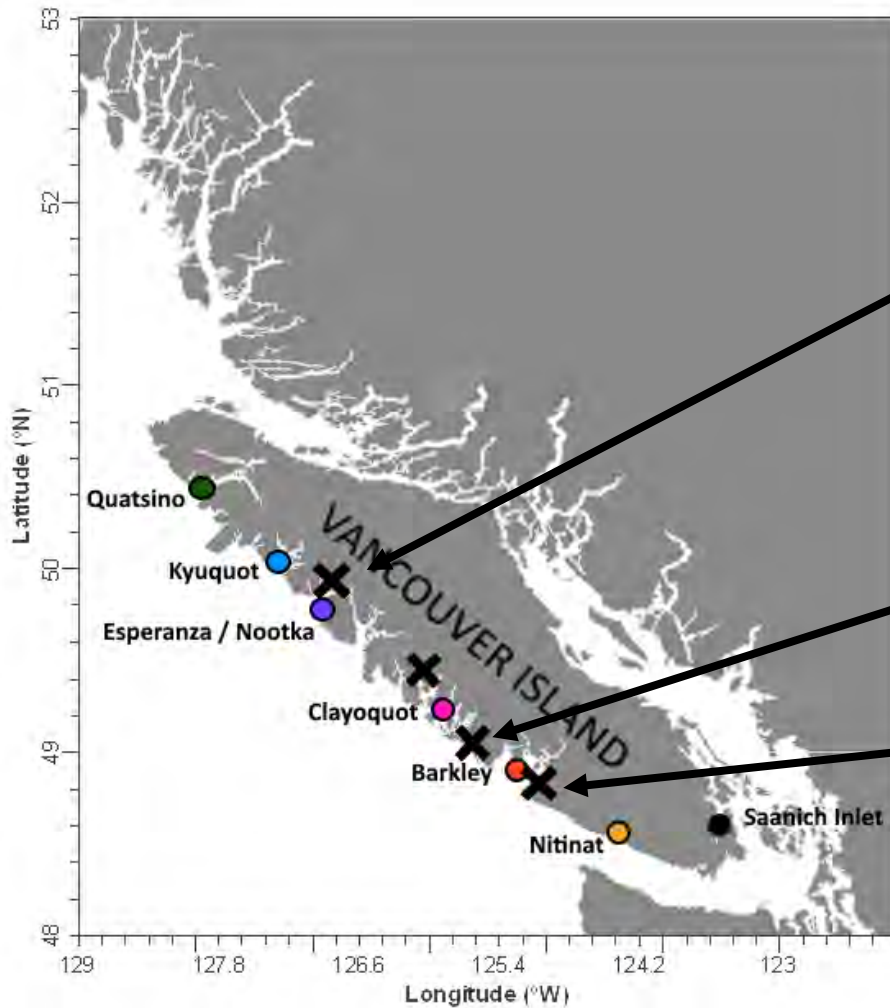
Long Beach, June 15
P. fraudulenta

Long Beach, June 11
P. australis

Bamfield, May 6, *P. australis*



Pseudo-nitzschia species in local samples

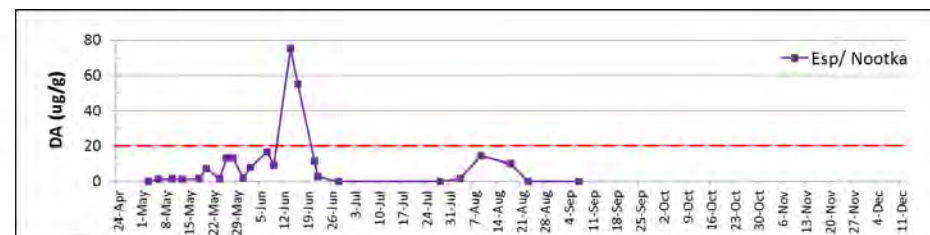


Esperanza Inlet, June / July
Pseudo-nitzschia spp.

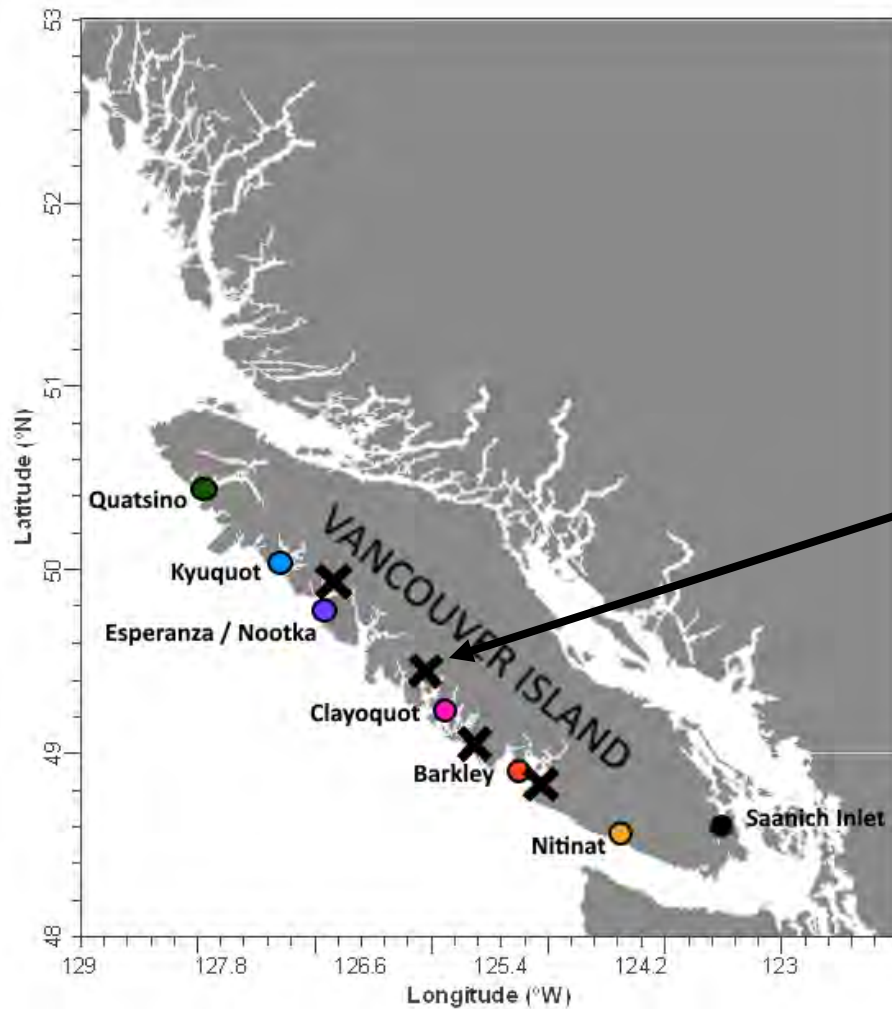
Long Beach, June 15
P. fraudulenta

Long Beach, June 11
P. australis

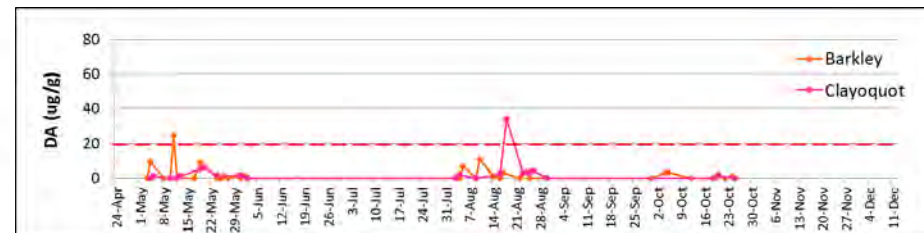
Bamfield, May 6, *P. australis*



Pseudo-nitzschia species in local samples

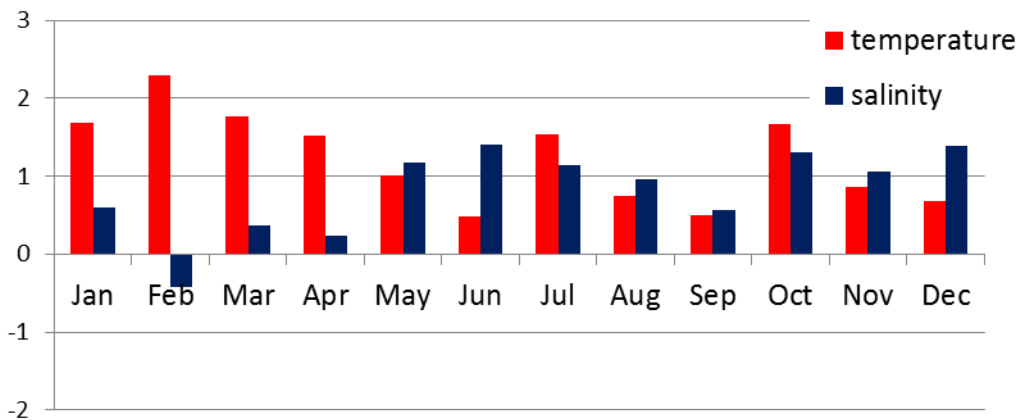


North Clayoquot Sound,
mid-August,
mix of *Pseudo-nitzschia* spp,
10,000 cells/mL in 1m sample

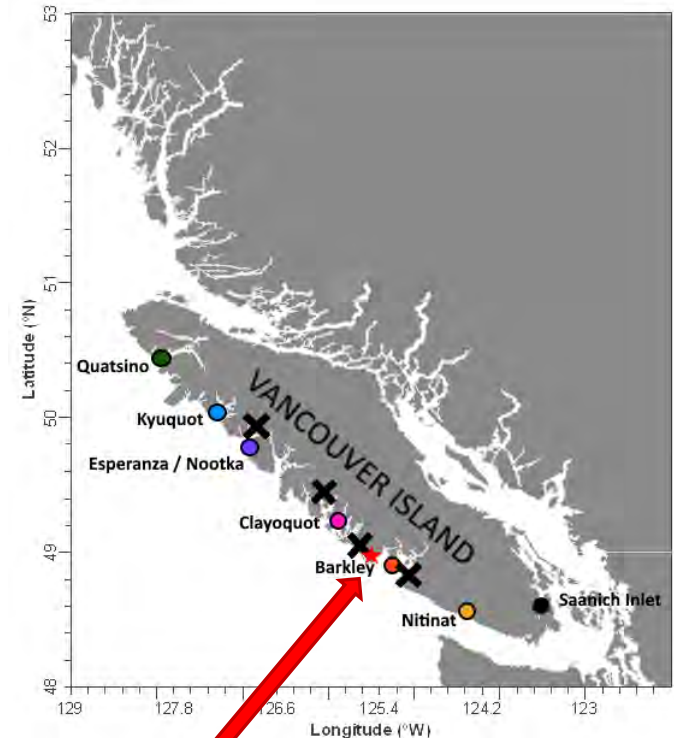


Water temperature and salinity West Coast Vancouver Island 2015

Amphitrite Point Lighthouse data 2015
Temperature and Salinity anomalies

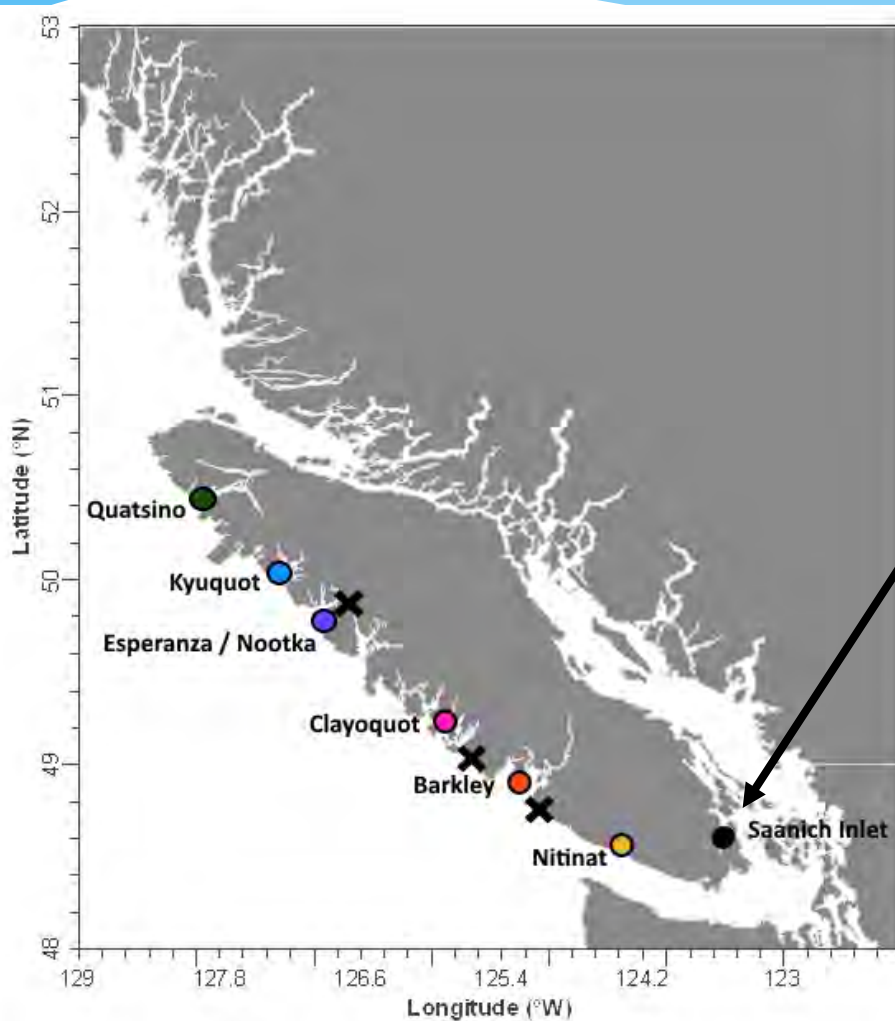


- 2015 anomalies from 1956 - 1991 mean
- January – May mean temperature was +1.7° C (influence of “The Blob”)
- salinity was above average for every month but February

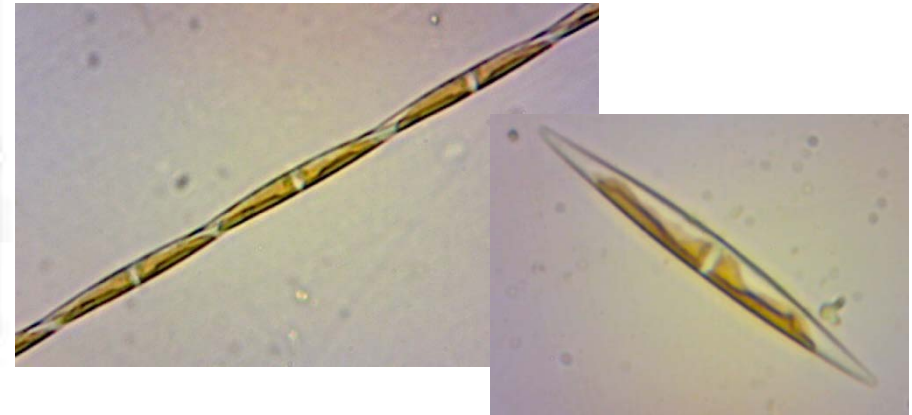


Amphitrite Point

Afterword: Saanich Inlet, November



- Saanich Inlet, November 6
- 54 $\mu\text{g/g}$ DA (Patricia Bay)
 - *P. australis* and domoic acid detected in water samples (Goldstream)



Summary

- * DA levels on WCVI in 2015 were higher than in previous years and unusually widespread
- * Water samples from sites near high DA areas had a mixture of *Pseudo-nitzschia* species, including *P. australis*
- * Temperature and salinity at Amphitrite Point were above average for almost all of 2015 (T +0.5 – 2.3°C; S -0.4 – +1.4 ppt)
- * High DA and *P. australis* were seen in Saanich Inlet (SE Vancouver I) in November 2015

Thanks to:

- * Canadian Food Inspection Agency, Shellfish Inspection Branch, for use of domoic acid data
- * Kate Rolheiser, Nova Seafoods, Bamfield BC
- * HAMP participant salmon aquaculture companies of BC, including Grieg Seafoods (Steve Munroe and others), Marine Harvest Canada (Jay Pudota, Dean Trethewey and others), Cermaq Canada (Clayoquot area)
- * Brian Bill and Vera Trainer, NOAA Seattle
- * HAMPsters past and present

And thank you for your attention!



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